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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,679	08/01/2001	Juliana H.J. Brooks	BLP:101 (a) US-CIP	6650

7590

07/11/2003

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EXAMINER

WEBER, JON P

ART UNIT

PAPER NUMBER

1651

DATE MAILED: 07/11/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,679

Applicant(s)

BROOKS ET AL.

Examiner

Jon P Weber, Ph.D.

Art Unit

1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1651

Status of the Claims

Claims 1-15 have been presented for examination.

Election/Restrictions

Applicant's election of the species (a) metals as physical catalyst, and (b) platinum as the metal in Paper No. 6, filed 21 April 2003 in response to the restriction of paper number 3, mailed 17 October 2002 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election **without** traverse (MPEP § 818.03(a)). Claims 5-6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made effectively **without** traverse in Paper No. 6.

Claim Rejections - 35 USC § 101/112

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-15 are rejected under 35 U.S.C. 101 and/or 112, first paragraph because the disclosed invention is inoperative and therefore lacks utility and enablement.

The claimed invention is drawn to augmenting a physical catalyst in a chemical reaction with at least one frequency of the spectral pattern of the catalyst. There are two possible

Art Unit: 1651

interpretations of this claim: 1) that there is some special electromagnetic spectrum of the catalyst corresponding to its spectral pattern which is distinct from its ordinary observed absorption or emission spectrum, or 2) the "spectral pattern" is indistinguishable from ordinary absorption and emission spectra and the process corresponds to ordinary photochemical processes. This rejection is based on interpretation (1) above. Interpretation (2) above will be dealt with as an art rejection.

The disclosure does not describe how to obtain a spectral pattern for a catalyst that is distinct from its ordinary absorption and emission spectra and that corresponds to the "energy" levels of the catalyst so that processes distinct from ordinary photochemistry can be used to catalyze reactions in the same manner as the physical catalyst itself. A person of ordinary skill in the art would be greatly surprised that such a process could occur.

The theory behind the spectral pattern appears to be flawed in a number of ways. Stated in its simplest form at page 10 of the disclosure the implication is that there is a spectral pattern for the reactants, the products and the catalyst and that the difference in frequency between the reactant and product can be remedied by the frequency of the catalyst. This contradicts the well established field of kinetics and the recognition that rate of reactions is controlled by the size of the activation energy barrier. Conventional theory posits that a catalyst provides an alternative pathway between reactants and products that uses a lower activation energy and thereby enhances the rate of reaction. The details of how this occurs on the atomic and molecular level for simple catalysts such as metals and complex catalysts such as enzymes is an active area of research that has not yet been resolved. Some of the broader elements have been provided, but how these elements actually provide a lower energy pathway is not clear.

Art Unit: 1651

According to the instant hypothesis, in order to augment the physical catalyst, the spectral pattern must duplicate at least one critical frequency that the physical catalyst provides. This allegedly enhances the reaction. The examples in the disclosure have been carefully considered and no evidence has clearly been provided to establish (1) what the spectral pattern is for any catalyst, or (2) that a spectral pattern has been used to augment a physical catalyst. Given the sincere skepticism of persons of ordinary skill in the art that this is possible, the burden is applicants to provide solid evidence that this process is practicable.

Claim Rejections - 35 USC § 103

This rejection is based on interpretation (2) above, and is further based upon the disclosed example of platinum catalyst/platinum hollow cathode lamp combination in the formation of water from hydrogen and oxygen.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gdowski et al. (1982), Mitchell et al. (1986), Mitchell et al. (1987), Verheij et al. (1995) and Verheij (1997) in view of Volman (1955) or Volman (1956) with evidence provided by Sansonetti et al. (1994).

Art Unit: 1651

Gdowski et al. (1982), Mitchell et al. (1986), Mitchell et al. (1987), Verheij et al. (1995) and Verheij (1997) disclose that platinum catalyzes the reaction of hydrogen and oxygen to form water via an adsorbed OH intermediate.

Volman (1955) and Volman (1956) disclose that the reaction of hydrogen with oxygen to form water is catalyzed by light at 1849 Å.

Sansonetti et al. (1994) discloses that Pt/Ne hollow cathode lamp has an emission peak at ~1849 Å.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the instant methods for their known benefit since each is well known in the art for their claimed purpose and for the following reasons. This rejection is based on the well established proposition of patent law that no invention resides in combining old methods of known properties where the results obtained thereby are no more than the additive effect of the methods, *In re Sussman*, 1943 C.D. 518. Any combination of the methods embraced by the claims is therefore *ipso facto* unpatentable.

Accordingly, the instant claims would have been obvious to one of ordinary skill having the above cited references before him.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Art Unit: 1651

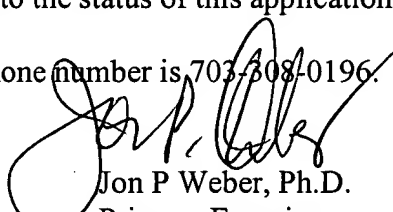
No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon P Weber, Ph.D. whose telephone number is 703-308-4015.

The examiner can normally be reached on daily, off 1st Fri, 9/5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 703-308-4743. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.



Jon P Weber, Ph.D.
Primary Examiner
Art Unit 1651

JPW
July 10, 2003